

Early Historic Archaeology in Japan

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INTRODUCTION

THE EARLIEST examples of Japanese written records are the inscriptions on the iron sword found in Etafunayama tumulus and that on the bronze mirror in the possession of Sudahachiman shrine. The former is dated at approximately A.D. 483 and the latter is A.D. 443 or 503. But, the number of written records from this time is quite small and the period therefore cannot correctly be considered part of the "Historic Age."

Japanese archaeologists refer to the periods after the end of the 6th century as belonging to the "Historic Age" because the amount of contemporaneous written materials gradually increases from this time on. Also, the descriptions concerning this time, as given by the two oldest historical records (the *Kojiki* and the *Nihonshoki*, both compiled in the 8th century), are considered more reliable.

The age preceding the Historic Age is called the "Tumulus Age." Since each of these terms ("Historic" and "Tumulus") comes from a different basis of periodization, we must accept the fact that they overlap by more than a half century. Obviously, such ambiguity must be corrected in the future. But, for the time being, archaeologists accept this periodization for the sake of convenience in research.

Before World War II, historical archaeology focussed mainly upon temples, roof tiles, and stone monuments, all closely connected with Buddhism. Then, "historical archaeology" was nearly synonymous with "Buddhist archaeology." Investigations of palace sites were conducted by historians and students of architectural history, but archaeologists did not yet participate.

These shortcomings have been remedied during the past twenty years. First, the scope of research has been greatly widened. Artifacts from the entire range of human existence—palaces, cities, villages, factories, and tombs—began to be

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interpreted from the viewpoint of historical archaeology. Most importantly, small discoveries, although perhaps aesthetically worthless, became the objects of research. The research of earthenware, for example, now plays an especially important role in assessing relative chronology.

Second, the scale of excavation has been greatly enlarged. The largest excavation carried out since World War II is that of the Nara palace site (Plate I). Twenty-two percent of the original area (1,200,000 m²) had been unearthed by 1974, and work is still going on. In addition, extensive excavations are being undertaken at sites of ancient local administrative offices and villages. These excavations have provided much more accurate information than did earlier trench excavations.

Furthermore, excavations have brought about a considerable increase in the number of written records. Historians had thought Japanese ancient written records had all been found and that there was little possibility of finding any more. But, in 1961, a quantity of wooden tablets bearing 8th-century records written in *sumi* (Japanese ink) was found at the Nara palace site (Plate II). After this initial discovery, similar wooden tablets were recovered from sites of palaces, government offices, and even villages all over the country. The oldest tablet found so far dates back to the first half of the 7th century.

In ancient China, pieces of wood or bamboo were used as writing surfaces. Their use continued even after the invention of paper. The practice was introduced to Japan concurrently with Chinese characters. Since these tablets had been completely submerged in clean underground water, they had been preserved from decomposition for more than a thousand years, to this day. Wasted or incorrectly written tablets were sometimes shaved and reused. Some of these shavings, bearing legible writing, have been found as well. Many kinds of memoranda and tags are included in these wooden tablets. They describe examples of official management procedures. As they often bear dates, they give important clues as to the dating of sites and the finds which were discovered in the same layer of excavation.

The Historic Age is divided into several periods, which are named for the seats of the respective administrations. They are:

| | |
|------------------------|--------------------------|
| Asuka Period | end of 6th century – 710 |
| Nara Period | 710 – 794 |
| Heian Period | 794 – 1192 |
| Kamakura Period | 1192 – 1333 |
| Nambokucho Period | 1336 – 1392 |
| Muromachi Period | 1392 – 1573 |
| Azuchi-Momoyama Period | 1573 – 1603 |
| Edo Period | 1603 – 1867 |
| Present Period | 1867 – |

“Heian” is the eulogistic name of the capital which was located in present-day Kyoto. “Muromachi” is a road in Kyoto, and “Edo” is the old name for present-day Tokyo.

Only those remains that are pre-Kamakura are widely studied as objects of archaeological research. As for later periods, only special kinds of remains—castle sites or kiln sites, for example—are the objects of study. Therefore, the research

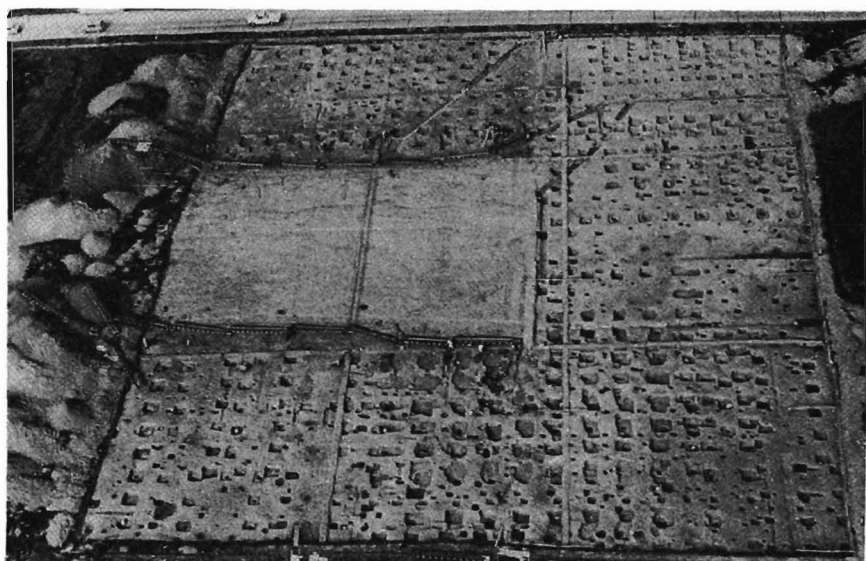


Plate I Excavation at the Nara palace site.

上苑園主
郡白濱
所住
寺
宋
白
郡
馬
轡
具
調
陸
下
寺
主
年
月

冬
河
園
主
郡
白
濱
所
住
寺
宋
白
郡
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主
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Plate II Wooden tags found at the Nara palace site, bearing name and address of taxpayer, name and quantity of item.

that will be described in this article has as its limits the Asuka Period and the Heian Period, inclusively.

CAPITAL CITIES

In ancient Japan, the center of politics and culture was situated in Yamato (present-day Nara Prefecture) and its neighboring provinces (the so-called Kinai region). The residence of the emperor was customarily relocated every generation. Before the Asuka Period, according to the oldest chronicle, the residence moved from place to place within the Kinai region. Judging from this custom, it is supposed that the structure of the residence was probably simple and was accompanied by little urbanization. However, the actual residential sites have not yet been found.

Before the Asuka Period, the Yamato court ruled over the larger part of Japan, but clan leaders were the actual holders of power in their communities, the Yamato court having only indirect control. This pattern changed in the course of the Asuka Period, the Yamato court achieving centralization of the state by utilizing the model of the Chinese ruling system: legal codes, government organization, the registering of people, and so forth. Such development of the ruling system required a capital as a seat of the imperial residence and administrative offices.

The initial example is Asuka, the capital of the Asuka Period, located about 30 km south of the present Nara city (Fig. 1). This area had been the domicile of immigrants from continental Asia and also the base of the Soga family, the great chiefs who assumed leadership in the Yamato court by influencing the immigrants. The imperial palace was relocated to Asuka in 592. It is presumed that the Soga used their influence to move the palace. After the fall of the Soga family in 645, the imperial family took over the reins of government and continued to live there almost continuously thereafter except for brief periods of relocation to Naniwa (present-day Osaka) and to Otsu (Shiga Prefecture).

The tradition of the palace being relocated with each generation survived throughout the Asuka Period; palaces were shifted from place to place within the Asuka area. The total number of palaces reached ten.

The Asuka capital was formed without definite city planning. As the result of gradually increasing numbers of palaces, temples, and other buildings, it assumed the appearance of an urbanized area. On the other hand, the general features of ancient capitals which were established systematically—for instance, Nara and Heian (present-day Kyoto)—were as follows: (1) their outline was rectangular; (2) streets were laid out in a grid; (3) they faced south; (4) their central thoroughfare ran from north to south, the length of the city; (5) the palace was situated at the northern end of the central thoroughfare. Such capital planning was apparently in imitation of Chinese models such as Lo-yang (the north Wei dynasty) or Ch'ang-an (T'ang dynasty). However, there was a great difference between Chinese and Japanese cities, insofar as the latter were not surrounded by walls. This unusual feature distinguishes ancient Japanese cities not only from those of ancient China but also from numbers of ancient cities all over the world.

A theory has been proposed which claims that both the Naniwa capital and the Otsu capital (constructed outside Asuka district during the Asuka Period) had systematic capital plans. This theory is based only on surface research of present-day road patterns, not on results of excavations. As regards the Otsu capital, evidence

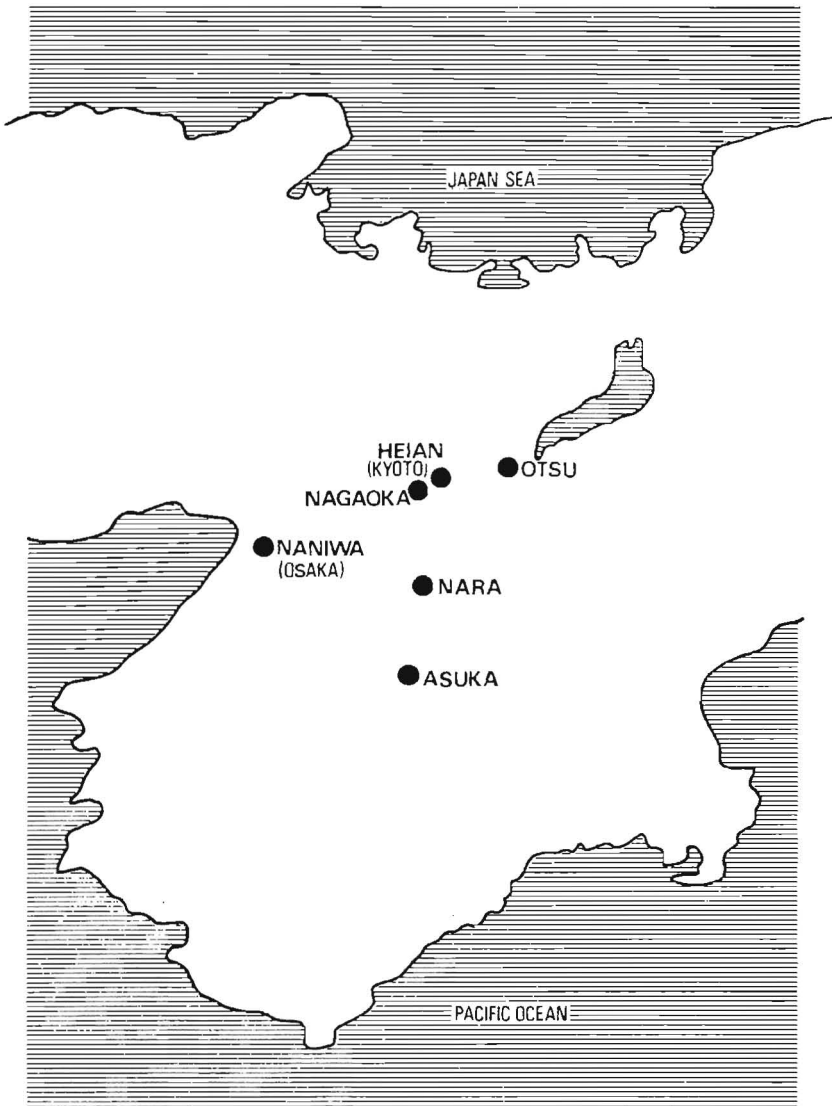


Fig. 1 Locations of ancient capitals.

in increasing opposition to this theory has been presented, a result of recent excavations.

The Fujiwara capital (694–710) is the earliest example of a systematic layout confirmed by excavation. It was adjacent to the Asuka capital and, in a wide sense, belonged to the Asuka district. It had the features of ancient capitals that were mentioned earlier (Fig. 2, *a*). The outline of the capital was rectangular (east to west, 2.1 km; north to south, 3.1 km). Its location and size were determined by three roads running through Nara basin that were established before construction of the capital. The Fujiwara capital was located in the rectangle bordered by Nakatsu Road on the east, Shimotsu Road on the west, and Yoko thoroughfare on the north.

The center-to-center (ctc) distance between any two adjacent streets in the grid was 264 m. A lane ran between adjacent streets. Therefore, one block (the smallest area bounded by streets or lanes) was approximately 132 m². Since a chain of hills and a river ran through the city, it is doubtful whether the grid layout was consistently adhered to. Excavation of the roads has been carried out only in part. Detailed research is left for the future.

The layout of the Nara capital (710–784), the capital subsequent to Fujiwara, has in the past been approximated from traces of older streets that are well preserved in present-day roads and paddy fields, and from a number of documents. Lately, excavations have begun to throw light on further details.

The city plan of the Nara capital had a close connection with that of the Fujiwara capital (Fig. 2, *b*). The central thoroughfare was laid out on Shimotsu Road, that is, on the northward extension of the western boundary of the Fujiwara capital. The width of the Nara capital was fixed by measuring off that of the old capital onto both sides of this thoroughfare. In effect, the Nara capital was twice as wide as the Fujiwara capital. Its length was one-and-a-half times as great. In addition, two rectangular parcels of land were annexed to the main area—one on the eastern boundary and the other on the western end of the northern boundary. The ctc distance between adjacent streets was generally twice as great as previously, but now three lanes, instead of one, ran between them.

From the center of the southern boundary of the Nara capital, the city's main gate (Rajo-mon) has been excavated. The central thoroughfare was 90 m wide. In the eastern and western parts of the capital, government-controlled markets were set up next to the canals. Most of the temples in Asuka were moved along with relocation of the capital, and their imposing appearance added new color to the city.

One block bounded by streets or lanes was called a *tsubo* or *machi*. Surmising from land deeds of the time, 1/16 of a block (a rectangular piece with a length of 1/2 block and a width of 1/8 block) was the probable unit of housing allotment to the common people. A block which may have been divided in such a way was recently excavated. Judging from the housing layout of this example, each household seems to have been composed of one or two houses of the buried-pillar type and a well. But, it is still unconfirmed as to whether this example is representative of the time. The residences of aristocratic families were naturally much larger. Some of them occupied more than a block. These homes were of the buried-pillar type and had gardens and ponds.

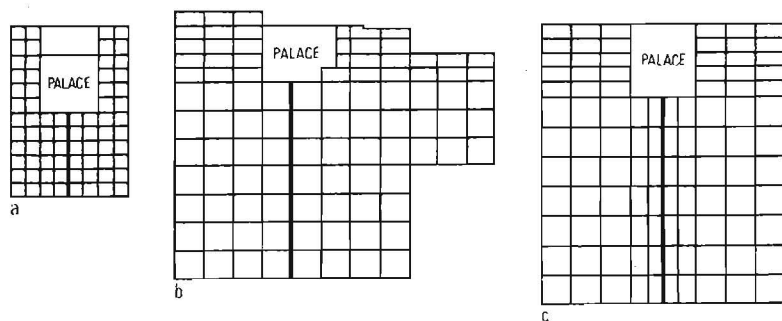


Fig. 2 Layouts of ancient capitals. *a*, the Fujiwara capital; *b*, the Nara capital; *c*, the Heian capital.

The capital subsequent to Nara was Nagaoka (784–794). It served as the capital for only ten years. Before erection was completed, the project was abandoned for some reason—perhaps because of a flood—and the capital was moved to present-day Kyoto (the Heian capital). The layout of the Nagaoka capital has not yet been confirmed, but it was probably similar to that of the Heian capital.

The Heian capital (794–) was the last established by the ancient centralized administration. As the ancient capital site almost coincides with that of the present city, excavations have been fairly restricted. However, relying on old drawings and numerous documents for most of the data, we are able to envision the ancient situation to a considerable degree (Fig. 2, c).

The outline of the Heian capital was rectangular (east to west approximately 4.5 km, north to south approximately 5.2 km). The layout, similar in appearance, did have an important dissimilarity from its predecessor. In the Nara capital, the ctc distance between streets and lanes on the grid was fixed; hence, the size of each block (*machi*) was determined by the width of its bounding roads, resulting in nonuniform block sizes. In the Heian capital, however, the size of all blocks was fixed and uniform (approximately 120×120 m); hence, the ctc distance between adjacent roads was nonuniform due to their differing widths. Comparing systems, it is obvious that the latter was more suitable for equal land allotment, even though it required greater initial efforts in drawing and measuring.

The Heian capital, not having “annexed parcels” of land which the Nara capital had, was strictly bisymmetrical in layout. Government offices, markets, and temples themselves were laid out in this manner. However, orderly as it was, this plan did not quite fit the natural terrain of the city. As the western half of the capital was low and swampy, it was gradually abandoned, and the capital was instead extended eastward, toward the high and dry district over the original border.

After a capital had been relocated, the former area reverted rapidly to a rural state. This pattern was common to many ancient Japanese cities. They were established with the intention of their serving only as seats of government. Most of their inhabitants were government workers and their families, who were eventually relocated along with the capital. Thus, relocation resulted in almost complete devastation of the former capital. If these ancient cities had been centers not only of politics but also of trade and handicrafts, they would not have died so rapidly. But in those times, the various factors leading to development of cities as economic centers had not yet matured.

PALACES AND GOVERNMENT OFFICES

Among the palaces of the Asuka Period, the locations of only two, the Naniwa palace and the Fujiwara palace, have been confirmed by excavations.

As regards the rest, only the presumed sites have been excavated. But, these excavations have brought to light the following: The palaces prior to the Fujiwara palace were most probably constructed with their pillars simply inserted into the ground and their roofs thatched with grass, bark, and branches. The simplicity of construction was closely connected with the palace-relocation tradition, which, according to the most accepted theory, was observed to escape the spiritual pollution caused by the death of the former emperor. In addition, another point should be

considered: Since the pillars of the buildings directly contacted the soil, their lifetimes may be estimated as having been about twenty years. This closely correlates with the average period of an emperor's reign. So, whatever the social or religious reasons may have been, the palace-relocation tradition was at least required from a technical viewpoint.

The Fujiwara palace, the last of the Asuka Period, was a highly developed one. It had a layout 1 km² and was surrounded by walls and ditches. The palace faced south and each wall seems to have had three gates (Fig. 3).

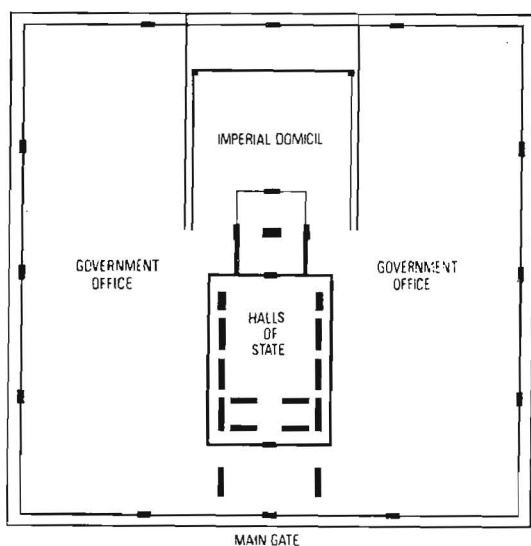


Fig. 3 Layout of the Fujiwara palace.

The palace was composed of three sections: (1) the imperial domicile, (2) the halls of state and (3) the government offices. Since the imperial domicile and the halls of state were joined together and situated on the center line of the palace grounds, the emperor had easy access to the halls. The emperor's private quarters were located at the northern end of the halls. In front of the halls (to the south) stood twelve buildings, surrounding the courtyard.

The Fujiwara palace had epoch-making significance in the history of palace construction. It was the first example of a palace adopting the Chinese architectural techniques of stone foundations and tile roofing, which had already been incorporated in Japanese temple design. The fact that the palace-relocation tradition was broken for the first time during this period seems to have had some connection with the acceptance of these new techniques. While they were used exclusively in the construction of the halls of state and the gates, the construction of the imperial domicile and the office buildings followed the traditional buried-pillar technique.

Such magnificent, highly developed palaces did not appear suddenly. There has been discovered in the Naniwa palace a complex of buried-pillar buildings that might have been the forerunner of the domicile-and-halls complex in the Fujiwara palace.

The plan established for the Fujiwara palace was generally followed in subsequent palaces (Nara, Nagaoka, and Heian), but some modifications were made. The most noteworthy was the total separation of the imperial domicile and the halls of state. In the Nara palace, they were still connected, as was the case in the Naniwa and Fujiwara palaces. However, beginning with the Nagaoka palace, they were separated; that is, while the halls of state were laid on the center line of the palace grounds, the domicile was moved to the northeastern quadrant.

The construction of palaces required a great quantity of materials. It is estimated that more than five million roof tiles were used in the construction of the Nara palace. Government-controlled factories were set up for producing these tiles. Since such a number could not be produced at once, buildings of the Fujiwara palace were torn down and scrap tiles carried to Nara for reuse. Tiles bearing the Fujiwara palace pattern have been found in large quantities at the Nara palace site. This situation repeated itself in subsequent relocations, and finally the tiles of the Fujiwara palace were carried all the way to the Heian palace. Such recycling was probably applied to other construction materials, such as lumber.

The government established agencies in the provinces. Japan was divided into more than sixty provinces; provinces were in turn divided into districts. An administrative office was set up in every province and every district. Additionally, in Kyushu, being situated at the southern extreme of the government's sphere of influence and being the door to the continent, the Kyushu Defense Headquarters (Dazaifu) was established. This agency served as the supervising center of administration and foreign relations for the region. Similarly, at the northeastern extreme of the sphere of influence, the Toga garrison (now Miyagi Prefecture) was established to preserve supremacy over this region. Many of these local administrative offices had operational plans similar to those of the palaces, only on a much smaller scale. This illustrates the degree of control the ancient centralized government exercised over the provinces.

BUDDHIST TEMPLES

Ancient Japanese Buddhist temples usually had compounds of more than 10,000 m² in area and faced south. A pagoda, where Buddha's ashes were enshrined, a main hall, and a lecture hall were all located in the center, with the priests' living quarters behind them.

When Buddhism was introduced in the middle of the 6th century, the Soga accepted this new religion and in 588 began to construct Asukadera (temple). Besides being the oldest genuine temple in Japan, it is the first example of a building with pillars set on foundation stones, and tile roofing. It is recorded that the construction of the temple proceeded under the direction of craftsmen from Paekche in southern Korea. The design of the roof tiles and the structure of the roof-tile kiln found at the site are indeed similar to ones found in Paekche. As regards the layout of the temple, there is nothing similar in Paekche, but there is in Koguryo, in northern Korea. It is evident that the techniques used in the construction of Asukadera were derived from those used in Korea.

Subsequently, many temples were erected by the emperor and by the great clans. The construction of new temples was a widely prevalent activity in the latter half

of the 7th century; sites extend from eastern Japan to Kyushu. Thus far more than 450 temples have been discovered that were constructed during this period.

Kawaradera in Asuka is an example typical of this period (Plate III). As the result of the development of supporting structures for eaves, the eaves of this temple extended much farther than those of Asukadera. Tiles used in the eaves were also more brilliant. These new techniques were probably introduced from China. The temple's architects used T'ang units of measure (1 *shaku* = approximately 0.3 m) rather than the so-called Korean units (1 *shaku* = approximately 0.35 m), as used in Asukadera. This again indicates the predominant influence of Chinese architectural technique on Japanese architecture. This "influence" was actually a widely distributed phenomenon, seen not only in the architectural field but in other cultural areas as well. Chinese culture, formerly introduced through Korea, was beginning to come directly to Japan.

With the relocation of the seat of government to the Nara capital, most of the temples in Asuka also moved to Nara. This moving and reconstructing process provided a good opportunity to consider new architectural techniques. There was a competitive atmosphere, and each temple utilized these new techniques to make its structure as magnificent as possible. Pagodas gradually lost their religious significance and became merely ornamental symbols. While previously they had always been situated in the centers of temple compounds, they were now moved up to the front.

In the Nara Period, enforcing the accepted policy of protecting the state with Buddhism, the emperor ordered the establishment of provincial monasteries and nunneries. In Nara, Todaiji was erected. Construction of these temple complexes was a very slow process. Investigations show that many of them were barely completed by the end of the period. These projects exerted great pressures on the state finances, but on the other hand, they served to introduce new architectural techniques to the provinces.

At the time of relocation to the Heian capital, the monasteries in Nara were not allowed to move to the new capital in order to prevent interference in political affairs by Buddhist priests. In the Heian capital, only two state temples were constructed, bisymmetrically located in the east and the west. Completely subordinated to city planning, these temples became predominantly ornamentations.

Two new sects of Buddhism appeared at the beginning of this period. These esoteric sects built their main monasteries in the mountains, where monks could meditate or practice austerity in seclusion. Construction was kept very simple, unlike that of city-based Nara monasteries. This simplicity of construction delayed the progress of new architectural techniques.

FARMHOUSES AND VILLAGES

During the Asuka, Nara, and Heian periods, there were two general types of houses in the villages. The first, the pit-dwelling type, was basically the same as that used in the Prehistoric Age. The second, the buried-pillar type (i.e., having pillars inserted directly into the ground), resembled that used by commoners residing in the capital. The former, architecturally primitive, was gradually replaced by the latter. This was the general trend throughout the ages mentioned.

In the pit-dwelling, a grass-covered roof was placed over a pit several tens of cm in depth. Since the eaves either touched the ground directly or rested on a mound built around the pit, the weight of the roof was dispersed among the supporting rafters. But as this was not enough to stabilize the roof, a system of upright posts and horizontal beams was added to provide additional support. Though the structure of the house was essentially the same as that during the Prehistoric Age, it was greatly improved in layout and detail. The design became quite orderly; that is, the layout of the house was almost square and the posts (usually four) were erected on the diagonals. Instead of a fireplace, a cooking stove was built along one wall. Smoke from the stove was vented through a small tunnel to the outside. Actually, it would more correct to say that these improvements originated slightly before the Historic Age and were then handed down.

A standard pit-dwelling house was roughly five m long, but in some exceptional cases the length was more than ten m. Although reliable evidence has not been found, indications are that several persons lived in a single house.

The buried-pillar type of house had vertical walls. The structure coincided with the general conception of a present-day house. The house was mostly of single-beam construction. In many village sites, the existence of storehouses with elevated floors has also been traced. Since they required supplementary pillars to bear the additional load, their past existence can be readily distinguished from that of an ordinary house. A standard complex probably consisted of one main house, one or two secondary houses, a storehouse, and a well.

Until recently, archaeologists and historians thought that all ancient Japanese farmhouses may have been pit-dwellings. But this belief was based only upon excavations of village sites in eastern Japan, a backward area during the period under study. Recent excavations of village sites in the Kinai region have clarified that buried-pillar construction was already in use in the farmhouses of the Asuka Period. At the beginning of buried-pillar usage, both construction types coexisted. But in the Gunge-Imashiro site (present-day Osaka Prefecture, a village site of the Nara to Heian periods), all buildings were erected with buried pillars, and no examples of the pit-dwelling type were found. Therefore in the central part of the Kinai region, it seems that the old type of farmhouse had completely given way to the new one. In eastern Japan, the former continued to be built throughout the Heian Period, and the dispersion of the new type was somewhat delayed.

Several tens of houses, sometimes even more than a hundred, are commonly found in a single village site. But these are cumulative numbers, including all buildings that were ever erected in the area. Hence, it is difficult to determine the exact number of contemporaneous houses on a site.

In those village sites where buildings were of the pit-dwelling type, the arrangement of houses had no definite pattern. Although in some reported cases villages were divided into groups of houses, this phenomenon was not seen everywhere. Village sites consisting of buried-pillar houses also were arranged irregularly, but only when they were located on a hill. When they were situated on level ground—as was the case, for example, at the Gunge-Imashiro site—houses were arranged on roughly rectangular coordinates. This arrangement was presumably influenced by the gridwise allotment of farmland, as will be described later.

Ancient legal codes formally prescribed that each village should consist of exactly

fifty households. This "village" refers to an "administrative" village, as opposed to a "naturally arising" village. Comparing the numerical distribution of village sites with that of administrative villages, one can readily conclude that, on the average, each administrative village was made up of a number of naturally arising villages. This organizational procedure was probably designed to equalize units of tax collection.

Today, there remain only a small number of the total census registers compiled during ancient times. The number of registered household members was fairly large. Most had twenty to thirty members, and in some instances, the number reached a hundred or even more. It is evident that the typical house found in a village site was much too small for so many people.

A household was sometimes registered as consisting of several subhouseholds. We might compare a "subhousehold" to a group of people coexisting in the same house, living and cooking together, and correspondingly, a "household" could refer to a group of pit-dwellings, as indicated by some site examples.

But a hasty conclusion must be avoided. There is the alternative possibility that registration not representing the actual circumstances was carried out, with the sole purpose of making the number of households in an administrative village as close to fifty as possible and thus appeasing the government.

FARMLAND

The history of Japanese paddy-land development goes back more than two thousand years. Before the Historic Age, a system supplying land irrigation from reservoirs fed by dammed-up streams was in use. Almost all land favorable for cultivation had most probably already been utilized before the Nara Period.

During the Nara Period itself, additional less-favorable land was continuously opened up. Beginning with the latter half of the period, the great monasteries undertook large-scale cultivation of paddy land. Some of these areas, such as the Chimori domain and the Kusooki domain (both in possession of Todaiji monastery), have been excavated. As regards paddy-land location, it is noted that it was usually in low, swampy places; some of the land eventually had to be abandoned. Presumably, these new developments sometimes were forced into quite unsuitable areas by the saturated condition of more favorable land.

The ancient legal codes presupposed that farmland was, in principle, public domain. Land was allotted to the people based on surveys taken every six years. To make the allotment system more efficient, the government made adjustments in the land-division format. From aerial surveys, traces of ancient gridwise partitioning (so-called *jori*) are visible all over the country, except for Hokkaido. One square of the grid was called a *tsubo*, corresponding to 108×108 m. This grid square was in turn divided into ten strips of one *tan* each. One *tan* was the smallest unit of allotment. Free males received two *tan* each; women received two-thirds of this amount, or $4/3$ *tan*. The grant to slaves was one-third of the amount allotted to free men and free women respectively; that is, male slaves received $1/3$ *tan* and female slaves $4/9$ *tan*.

A square section consisting of 36 *tsubo* was called a *ri*, and a belt of land consisting of end-to-end *tsubo* was termed *jo*. Since *jo*, *ri*, *tsubo*, and individual paddy fields

were numbered in a definite order, the location of each field could be specified with great accuracy. In the Nara basin, the area containing the capitals of Asuka and Nara, this *jori* system was well executed. The fact that land was reallocated in such a manner is an indication of the power exercised by the government of the time.

Curiously enough, the old chronicles have no description of the undertaking of this grandiose reallocation task. Hence, the exact period of this project remains to be specified.

After a thorough examination, it has been concluded that such reallocation was not performed just once. Traces of an earlier allotment, differing in geometry from that presently discussed, have been found. It seems that this earlier allocation was made on a district-to-district basis and that finally, around the Nara Period, unification and reorganization occurred. But the actual process involved here also remains to be unraveled.

Research into the land-allotment problem was previously conducted by historical geographers. But now, utilizing the latest excavation technology, archaeologists have begun to participate. In the environs of Horyu-ji, excavations of the temple and other buildings have clarified that land allotment was made three times with different orientations. At Koshoku city in Nagano Prefecture, it was discovered that a second allotment had been made on the area already covered by the first, after the land had been flooded.

As we can see, research of ancient land-allotment has come to its most intricate stages. But, unfortunately, critical clues are being destroyed daily by modern urbanization and zoning, and it is feared that necessary details will disappear before the survey is completed.

INDUSTRY

Ancient villagers were self-sufficient in most of the necessities of life. But, they had to obtain some items—highly specific ones such as salt, iron, and earthenware—from the outside world.

In ancient Japan, salt was produced by the following process: First, seaweed was dried until salt crystallized on its surface; second, brine was poured over the seaweed to greatly increase the concentration of salt in the brine; third and last, the brine was boiled in small clay vessels until nothing but salt remained. The existence of primitive salt-making factories is revealed by the discovery of thick layers of sherds (pottery fragments), as have been found in many places on Japan's coastline, especially on the coasts of the Inland Sea. This primitive technique was in use up until the Heian Period. However, in the Nara Period, a new technique characterized by the use of salt fields was adopted in some areas. This new salt manufacturing process was carried out on a grand scale by aristocratic families and the great monasteries. The old process was very likely under pressure of replacement by the new one.

The raw material of iron manufacturing was predominantly iron sand; in some districts, iron ore was used. Research into ancient ironworking sites has been carried on in the vicinity of the mountain district of western Honshu (main island). Though the smelting furnaces were rather small, most of them had a blasting system. But as the ironworking sites left few clues to specify their period, and since clues varied

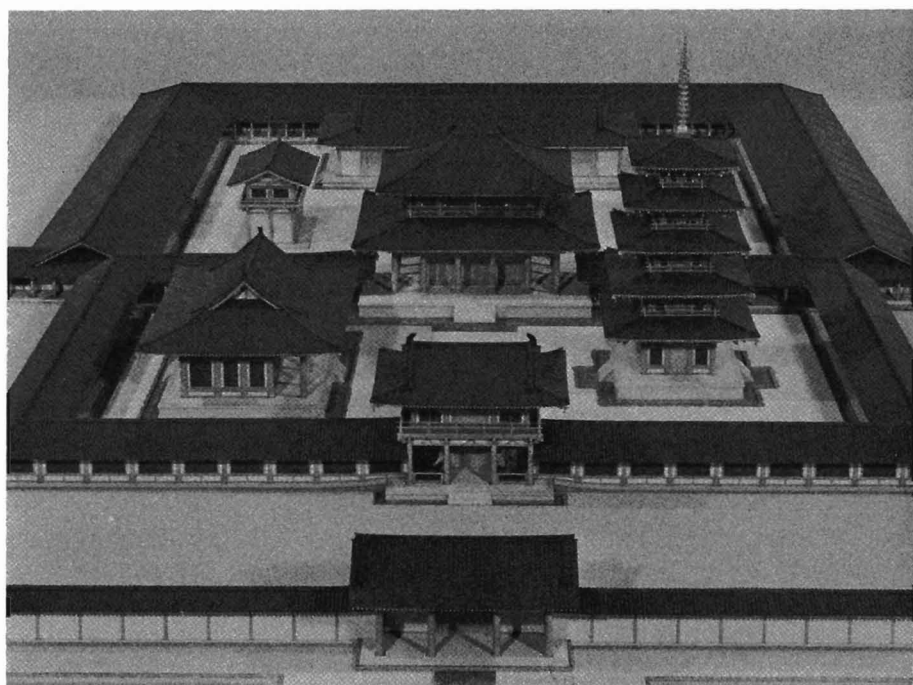


Plate III Model of Kwaradera (temple).



a

b

c

Plate IV *a*, Haji pottery; *b*, Sue pottery; *c*, two-color glazed pottery.

considerably from region to region, accumulated data has not yet been systematically processed.

There are three basic ancient types of earthenware in Japan: Haji pottery, Sue pottery, and glazed ware. Haji pottery (Plate IVa) is a native descendant of Yayoi pottery. Usually it was formed without the aid of a potter's wheel. The pottery has a reddish-brown coloring due to its low-temperature baking in an oxidizing atmosphere. As this pottery was baked without a kiln, tracing its sites of manufacture is very difficult. Yayoi pottery is considered to have been made in the gardens of farmhouses, as it often bears the impressions of unhulled rice. However, because Haji pottery of the Historic Age bears no such impressions, it is regarded as having been made by craftsmen.

In the Heian Period, potters of eastern Japan adopted the potter's wheel. In western Japan, following more traditional lines, mass production with less ornamentation and a simplified process was initiated. The period saw the appearance of black pottery (so-called Gaki), a descendant of Haji pottery with a high carbon content. Black pottery was even more simplified and standardized.

Sue pottery (Plate IVb) was introduced from Korea in the Tumulus Period. It was formed with a potter's wheel and baked in a reducing atmosphere in a high temperature kiln. It thus assumed a gray color. Since fairly advanced techniques were required, Sue pottery was produced by specialists from its beginnings. The required kiln was built utilizing the slope of a hill and resembled an inclined tunnel. Such a kiln was located in Suemura (present-day Osaka Prefecture), which had been a large-scale production area since the Tumulus Period but was phased out by the end of the Nara Period. It was then replaced by Sanage-yama (Aichi Prefecture) and some other districts. The cause of Suemura's collapse is surmised as having been the exhaustion of its fuel supply, but a definite theory has not yet been established.

In any case, the Sanage-yama district was favorably located for pottery making, producing a fine primary clay which could bear high temperatures. In addition to the usual Sue pottery, this area began to produce an imitation of Chinese porcelain, ash-glazed pottery.

The industries mentioned above supplied the demands of the common people. Additionally, there were some special industries that satisfied the more luxurious demands of the upper class. As artistic handicrafts were not produced in common factories, the government and monasteries kept skilled craftsmen under their direct control in special factories, for the sole purpose of fulfilling these upper-class demands.

Color-glazed pottery (Plate IVc) was made in such government-managed factories. This pottery was covered with a lead glaze which originated in China. Three color schemes were produced: solid green; green and white; and green, white, and brown. Since this kind of glaze had a low melting point, pottery was baked first without a glaze and then again with a glaze.

In the Nara Period, the government was easily able to exercise such full control over craftsmen, but in the Heian Period, when centralized control began to weaken, craftsmen began to gradually break away from such factories. Thereafter, their skills were introduced to the aforementioned districts (Sanage-yama, etc.) and color-glazed pottery gradually began to find its way to the villages.

TRANSPORTATION AND TRADE

The finances of ancient governments were supported by taxation, and tax payments were generally made with durable goods. Wooden tags excavated from the Nara palace site (Plate II) show that enormous quantities of commodities were brought to the capital from the provinces. One portion of the items collected was utilized by the court itself and another went toward the stipends of officials. The rest were sold at government-controlled markets. This hard-goods revenue system played a crucial role in the nationwide distribution of commodities, whereas independent merchants probably played a small role. Since the handicraft industry was still in its infancy, raw materials taken from the provinces were not compensated for in the form of an inflow of consumer goods. In other words, the distributive machinery was more or less limited to flow in only one direction.

Main roads, connecting the capital and the provinces, and their horse stations were provided only for the execution of official matters such as tax collection—not for the convenience of the public. One of these government roads, 9 m wide and graveled, was excavated at Takatsuki in Osaka Prefecture.

The transportation of goods depended upon shipping as much as possible. Unearthed wooden tags show, for example, that many tax-related articles were transported from Iba (Shizuoka Prefecture) to the capital mostly via water, with land routes making the final connections.

From archaeological materials alone it is difficult to ascertain the extent of development of the distributive machinery, but special kinds of earthenware offering clues as to their origin do provide valuable insight. From the Nara palace site, earthenware produced in distant places—such as Sanage (Aichi Prefecture), Kagami (Gifu Prefecture), and Samukaze (Okayama Prefecture)—has been excavated. Such a gathering of earthenware is a phenomenon seen only at the palace site; it has not been encountered at any village sites. However, the ash-glazed ware of Sanage-yama has been discovered at numerous village sites of the subsequent Heian Period, the site locations extending from eastern Honshu to Kyushu. This indicates that by this time the distributive machinery had developed to some extent. Furthermore, Chinese celadon porcelains have often been excavated from sites of the late Heian Period. These porcelains probably marked the beginnings of regular trade with China.

It was with the Kamakura Period that there began to arise new cities based on commerce and handicrafts, resulting from the economic developments that have been mentioned. Kusadosengen (Hiroshima Prefecture) is one example of such a medieval town.

The forerunner of Japanese coins was an unmarked silver disk with a central hole, minted in the later stage of the Asuka Period, but the first true coin was “Wado-Kaiho” (silver or copper), issued in 708. At that time, the demand of the people for coinage was very small. While the issue of coins was not yet practical, coins modeled after Chinese examples were introduced. The government encouraged their use by offering court rank as a reward to people who could show large savings. Seeing that counterfeit coins appeared shortly thereafter, coins seem to have achieved considerable circulation in the capital city and its surrounding areas.

Between 708 and 957, the government issued twelve kinds of coins. By such

frequent reminting, the government intended to make a profit by lowering coin quality and reducing conversion rates between new and old coins. This policy resulted in unrelenting inflation.

While "Wado-Kaiho" coins contained 90 percent copper, "Kengen-Taiho" coins in 1957 contained only 3.16–9 percent copper and were also smaller in size. They should have been called "lead" coins rather than "copper" coins. Since coin quality had deteriorated beyond acceptable reminting limits, the issuing of coins was discontinued after the "Kengen-Taiho" series, and coin circulation ceased for a while. But by the end of the Heian Period, as a result of an increasing demand for currency by the common people, imported Chinese coins became the new medium of circulation. This abnormal situation continued for a long time.

BURIAL PRACTICES

The ancient custom of building huge tumuli that prevailed during the Tumulus Age gradually diminished in scale during the Asuka Period. Tumuli became smaller and great efforts were spent in making the structures more exquisite rather than bigger in size. People presumably began to consider the building of huge tombs quite worthless.

A monument giving glory to the last stage in the history of tumuli is Takamatsuzuka (Asuka area), excavated in 1972. Although its stone chamber is very small ($1.0 \times 2.6 \times 1.1$ m), it has elaborate wall paintings in the Chinese style. This tumulus was probably built during the period of the Fujiwara capital. In the Nara Period, no huge tombs deserving the name "tumulus" were constructed.

Coincidentally with the decline of tumulus erection, the practice of cremation, derived from Buddhism, gained acceptance. In China, where people strongly wished to preserve corpses, the practice of cremation was followed only by Buddhist priests. But in Japan, where preservation was not a popular idea, cremation was easily accepted, not only by priests but also by lay Buddhists. The beginning of the cremation practice as recorded on documents was in 700, but it may actually have been before that time. In 703, cremation was accepted even by the emperor.

Nevertheless, on the whole only a small number of people were actually cremated. Most people were buried in cemeteries near their villages, following the custom of inhumation. In the capital city, the government prohibited burial inside the city limits and instead specified an area outside, such as the bed of a dry river, as the public cemetery.

CONCLUDING COMMENTS

Formerly, the role of historical archaeologists was regarded as being the collecting of data for historians. Now, historical archaeology is developing independently and in parallel with the study of history based on written records. The periods discussed in this article have produced a wealth of written records, but they were mainly concerned with political activities of the government or with court life. Actual economic situations and local history usually cannot be deduced from such records. In the future, historical archaeologists bear the responsibility for filling in the many blanks of written history.